(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 June 2001 (21.06.2001)

PCT

(10) International Publication Number
WO 01/45058 A1

(51) International Patent Classification[7]: G07F 7/10, G06F 17/60 // G07F 19/00

(21) International Application Number: PCT/US00/33802

(22) International Filing Date:
12 December 2000 (12.12.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/465,359 16 December 1999 (16.12.1999) US

(71) Applicant: THE COCA-COLA COMPANY [US/US]; One Coca-Cola Plaza, Atlanta, GA 30313 (US).

(72) Inventor: WHIGHAM, Roger, Chris; 657 Longwood Dr., N.W., Atlanta, GA 30305 (US).

(74) Agents: WARREN, Daniel, J. et al.; Sutherland, Asbill & Brennan, L.L.P., 999 Peachtree Street, N.E., Atlanta, GA 30309-3996 (US).

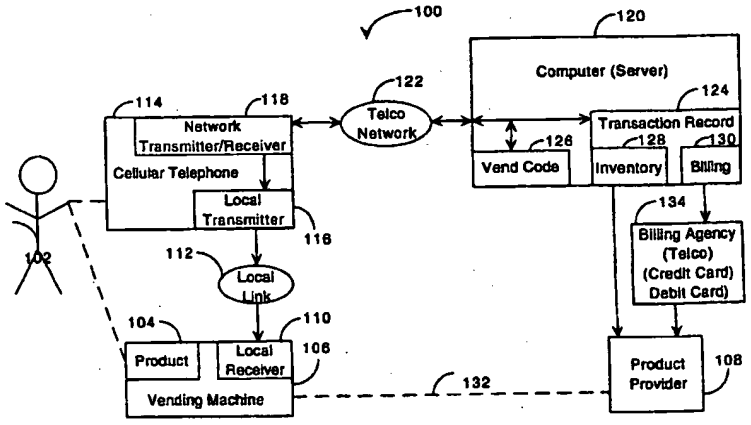
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *With international search report.*
— *Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: VENDING MACHINE PURCHASE VIA CELLULAR TELEPHONE



(57) Abstract: There is disclosed a system and method for purchasing a product from an automatic vending machine by means of a consumer's cellular telephone. The consumer requests the purchase of a product available from the vending machine by dialing a specified telephone number which connects the consumer's cellular telephone to a server operated by a billing agency. The billing agency may include the provider of the product, the telephone company that provides the cellular telephone service, a credit card company, or a bank that has issued a debit card. The server recognizes the request for the purchase of the product as either the request for credit at the vending machine or the request for a particular product, creates a transaction record, and communicates a vend code to the consumer. The transaction record includes a billing record that the billing agency uses to bill the consumer for the requested product and an inventory record that the product provider uses in connection with restocking the vending machine. Upon receiving the vend code from the server, the consumer transmits the vend code to the vending machine. The vend code may be an RF code, an audible tone code, or a manual code. Upon receipt of the vend code from the consumer, the vending machine either establishes credit for the purchase of a product in the inventory of the vending machine or directly dispenses the requested product upon receipt of the vend code.

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Vending Machine Purchase Via Cellular Telephone

Technical Field

The present invention relates to purchasing a product from an automatic vending machine. More particularly, the present invention relates to the purchase of a product from an automatic vending machine by using a cellular telephone.

Background Of The Invention

Automatic vending machines have become ubiquitous in public places offering consumers a variety of products from soft drinks to gasoline to currency. Each vending machine typically vends more than one product and sometimes at different prices. Conventional vending machines accept coins, paper currency, credit cards, or debit cards. Vending machines that accept coin or paper currency often fail to accept the coins or currency offered. Such vending machines also require that the consumer have readily available the currency required.

Vending machines that accept credit cards and debit cards are generally limited to dispensing gasoline at service stations or dispensing currency at automatic teller machines. In each circumstance, those vending machines require an online connection from the vending machine to the credit or debit card issuer to verify the availability of funds or credit before the transaction at the vending machine can be completed. The online connection to the vending machine must be secure and must be a dedicated connection that is available on demand to insure satisfactory transactions in terms of speed, security, and reliability.

Summary Of The Invention

The present invention eliminates the need for currency for a vending machine and also eliminates the need for a dedicated online connection between the vending machine and the issuer of a credit card or a debit card. Instead the system and method of the present invention allows a consumer to purchase a product from an automatic vending machine by using the consumer's cellular telephone, personal digital assistant (PDA), or similar wireless communication device as a link between the provider of the products in the vending machine and the vending machine.

The system of the present invention comprises an automatic vending machine, a cellular telephone, PDA, or similar communication device identified with the consumer, a cellular network for connecting the consumer's cellular telephone, PDA, or similar communication device to a server that is operated by a billing agency.

The automatic vending machine offers one or more products for purchase by the consumer. The automatic vending machine includes a local receiver which responds to a vend code generated by the server and communicated to the vending machine via the consumer's telephone, PDA, or similar communication device. The transaction record includes a billing record and may include an inventory record. The billing record is used by the billing agency for billing the consumer for the purchase of the product. The inventory record is sent to the product provider to facilitate restocking of the vending machine in the ordinary course.

The method of the present invention allows the consumer to purchase a product from a vending machine. When the consumer approaches the vending machine, the consumer is offered one or more products available from the vending machine. Such an offer is typically made by a display of the products along with information concerning the cost of the product and, in the case of the present invention, instructions on how to purchase the product by means of consumer's cellular telephone, PDA, or other personal communication device.

Once the consumer has selected the product he or she desires, the consumer places a telephone call via the consumer's cellular telephone, PDA, or other personal communication device to a telephone number indicated on the vending machine for the purchase of the particular product selected. The consumer's telephone call is completed to a server via a telephone network. The server is operated by the billing agency, which may include the provider of the telephone service, the provider of the selected product, a credit card issuer, a debit card issuer, or a third party billing agency. In one embodiment of the invention, the server recognizes the call as being a request for a particular product based on the number called, the input of additional dialed digits after the call is connected, and/or a verbal response from the consumer. In an alternative embodiment of the invention, the server recognizes the call as being a request for a specified amount of credit in the vending machine based the input of additional dialed digits after the call is connected, and/or a verbal response from the consumer.

Once the server has captured the information representing the request by the consumer for a particular amount of credit for the vending machine or for a particular product in the vending machine, the server generates a vend code which is transmitted via the telephone network back to the consumer via the consumer's cellular telephone, PDA, or other personal communication device as previously described.

In addition to generating and transmitting the vend code, the server also creates a transaction record indicating that the consumer has purchased the product

requested or been issued the requested credit. The transaction record includes a billing record for the consumer and may include an inventory record for the product provider. The billing record for the requested credit or product is used by the billing agency to bill the consumer. The billing agency may include the telephone company that provides the consumer's cellular telephone service, a credit card company, a debit card from a bank, or the product provider. If the billing agent is not the product provider, the billing agency remits the collected funds to the product provider to pay for the requested credit or product. The inventory portion of the record transaction is sent to the product provider so that the product provider can have an inventory record for determining when restocking of the vending machine is required. The inventory information and the billing information may also be collected by the product provider for use in connection with market research and assessment.

Brief Description Of The Drawings

FIG. 1 is a diagram illustrating a system for vending a product from an automatic vending machine in response to a request from a consumer via a cellular telephone.

FIG. 2 is a flow chart illustrating a method of for vending a product from an automatic vending machine in response to a request from a consumer via a cellular telephone.

Detailed Description Of Exemplary Embodiments

Embodiments of the present invention will hereinafter be described with reference to the drawings, in which like numerals indicate like elements throughout the several figures. The present invention is a method and system for vending a product from an automatic vending machine in response to a request from a consumer via a cellular telephone.

Turning to Figure 1, there is shown the system 100 of the present invention. System 100 is configured to allow a consumer 102 to purchase a product 104 from a vending machine 106. The product 104 is offered for sale through the vending machine 106 by product provider 108. For the purposes of this invention, the term "product" means both products and services that may be offered through a vending machine.

The system 100 comprises vending machine 106 having a local receiver 110, a cellular telephone 114 associated with the consumer 102 and having a local transmitted 116 and a network transmitted/receiver 118, and a computer (server) 120.

Unless otherwise indicated the term "cellular telephone" shall include a cellular telephone, a PDA, or other personal communication device. The consumer's cellular telephone 114 is connected to the vending machine 106 via the cellular telephone's local transmitter 116, local communication link 112, and the vending machine's local receiver 110. The consumer's cellular telephone 114 is also connected to the server 120 via the cellular telephone's network transmitter/ receiver 118 and telephone network 122. The telephone network 122 is a conventional cellular telephone system that allows the consumer 102 to use his or her cellular telephone 114 to establish a dial up connection with server 120.

The server 120 performs three functions. First, the server 120 receives the consumer's call requesting a particular product 104 in the vending machine 106 or credit at the vending machine 106 for purchasing the product 104. Second, upon identifying the request for credit at the vending machine 106 or for the product 104, the server 120 creates a transaction record 124. Third, in response to the request for credit at the vending machine 106 or for the product 104 in the vending machine 106, the server 120 generates a vend code 126 which authorizes the vending machine 106 establish credit for the consumer at the vending machine 106 or to dispense the requested product 104 to the consumer 102. The vend code 126 is encoded with a time stamp so that the vend code will expire within a short time thus inhibiting multiple unauthorized use in multiple vending machines.

In one embodiment of the invention where the consumer is requesting credit at the vending machine 106, a dial up number displayed on the vending machine 106 may be used to identify the vending machine. The server 120 captures the dialed digits and uses the number called to identify the vending machine 106. In order to determine the amount of credit requested by the consumer 102 for the vending machine 106, the server 120 may issue a query to the consumer 102 once the connection between the cellular telephone 114 and the server 120 has been established. In response to the query, the consumer 102 can identify the desired amount of credit by either dialing additional digits or by a verbal response that is decoded by voice recognition software on the server 120.

In a second embodiment of the invention, the server 120 may identify the request for a particular product 104 in vending machine 106 in several ways. First, each product 104 may have a unique dial up number for requesting the product. The server 120 captures the dialed digits and recognizes the request for the particular product 104 based on the number dialed. Second, the server 120 may issue a query to the consumer 102 once the connection between the cellular telephone 114 and the server 120 has been

established. In response to the query, the consumer 102 can identify the desired product 104 by either dialing additional digits to identify the product or by a verbal response that is decoded by voice recognition software on the server 120.

The transaction record 124 created by the server 120 in response to the request for credit or for the product 104 includes a billing record 130 and may include an inventory record 128. The inventory record 128, identifying the product 104 and the vending machine 106, is transmitted to the product provider 108 so that the product provider 108 can restock the vending machine 106 in the conventional fashion as indicated by line 132. The billing record 130 identifies the consumer 102 based on the consumer's association with the cellular telephone 114. The billing record also includes the amount of the transaction (either amount credited at the vending machine 106 or the price of the product 104) and may include other information about the transaction such as time, date, and location of the vending machine 106.

The billing record is used by billing agency 134 to bill consumer 102. The billing agency 134 may be the telephone company that provides the consumer 102 a bill for cellular telephone 114 on a regular basis. Alternatively, the billing agency 134 may be a credit card company, financial institution that has issued a debit card, or the product provider 108. Whatever billing agency 134 is authorized, the billing agency 134 bills the consumer 102 for the product 104 and collects the payment for the benefit of the product provider 108.

After the server 120 has generated the vend code 126 in response to the request for credit at the vending machine 106 or for the product 104, the vend code 126 is communicated to the consumer 102 via the telephone network 122 and the consumer's cellular telephone 114. The vend code 126 is in turn transmitted to the vending machine 106 via the local transmitter 116, the local link 112, and the local receiver 112 thereby authorizing the vending machine 106 to establish credit for the consumer at the vending machine 106 or to dispense the product 104.

In one embodiment of the invention, the local transmitter 116 of the cellular telephone 114 is an RF transmitter, and the local receiver 110 of vending machine 106 is an RF receiver. The vend code 126 is then transmitted by the local RF transmitter 116 of the cellular telephone 114 to the local RF receiver 110 of the vending machine 106 over local RF link 112. Upon receiving the vend code 126 at the local RF receiver 110 of the vending machine 106, the vend code authorizes the vending machine 106 to establish credit for the consumer or to dispense the product 104 to the consumer 102.

In a second embodiment, the vend code 126 is sent from the server 120 to the cellular telephone 114 as an audible tone or a series of tones that appears at the ear piece speaker (local transmitter 116) of the cellular telephone 114. The local receiver 110 of the vending machine 106 is a microphone that receives the audible vend code from the speaker of the cellular telephone 114. The local link 112 is therefore created when the consumer 102 holds the ear piece speaker (local transmitter 116) of the cellular telephone 114 adjacent the microphone (local receive 110) of the vending machine 106, and the vend code 126 is thereby transmitted over the audible local link 112 to the vending machine 106.

In a third embodiment, the vend code 126 is sent from the server 120 to the consumer's PDA 114. Upon receipt of the vend code 126, the consumer's PDA 114 activates its local IR transmitter and transmits the vend code 126 to the local IR receiver 110 in the vending machine 106 via the local IR link 112.

In a fourth embodiment, the vend code may be an alpha-numeric vend code 126 communicated orally to the consumer 102 via the consumer's cellular telephone 114 or graphically to the consumer 102 via the consumer's PDA 114. Particularly, the alpha-numeric vend code 126 may be created by voice synthesis at the server 120 and transmitted to the consumer 102 over the telephone voice link 122 to the consumer's cellular telephone 114. Upon hearing or seeing the alphanumeric vend code 126, the consumer 102 inputs the alphanumeric vend code 126 into the vending machine 106 via a keypad (local receiver 110) or other manual input device. Thus in the fourth embodiment, the local link 112 is the consumer.

Regardless of the form of the vend code 126 or the local link 112, the vending machine 126 is programmed to establish credit for the consumer or to dispense the product 104 upon receiving the proper vend code 126. In the second instance, a unique vend code may be created and transmitted to the vending machine 106 for each product available for vending machine 106. In a system having multiple vending machines, the vend code may be unique for each vending machine within the system. It should also be noted that in accordance with the system of the present invention, there is no dedicated communication link required between the vending machine and the server that authorizes the vending machine to establish credit or to dispense the requested product.

Turning to Fig. 2, there is shown a method 200 that allows the consumer 102 to purchase the product 104 from the vending machine 106 by using his or her cellular telephone 114. The method 200 beings at step 202 and proceeds to step 203. At step 203, the consumer 102 approaches the vending machine 106 that has the product

104 that the consumer 102 wishes to purchase. From information displayed on or adjacent the vending machine 106, the consumer 102 is able to ascertain the identity of the product 104 that he or she desires. In addition, instructions for using the consumer's cellular telephone 114 to request and pay for the product 104 are displayed on or adjacent the vending machine 106. Such instructions include a telephone number to call to request the product 104 and perhaps an alphanumeric identifier for the product 104 or the vending machine 106.

From step 203 the method proceeds to step 204. At step 204, the consumer 102 in response to the instructions at the vending machine 106 dials his or her cellular telephone 114 to make a telephone connection between the cellular telephone 114 and the server 120 via telephone network 122. At step 206, the server answers the call, and a connection between cellular telephone 114 and server 120 is established via telephone network 122.

From step 206, the method proceeds to step 208. At step 208, the consumer 102 requests credit at the vending machine 106 to purchase the product 104 or requests the product 104. A request for credit at step 208 involves requesting the amount of credit desired at that vending machine 106 and may involve identifying the vending machine 106. Depending on the level of security needed or the desire for inventory tracking, identify the vending machine 106 may not be necessary. If identifying the vending machine is desired, the vending machine 106 may be identified by having a unique dial up telephone number assigned to each vending machine. When the consumer dials that unique telephone number to establish the link to the server 120, the server 120 is able to identify the vending machine 106 by capturing the number dialed to make the telephone connection. Alternatively, where a single dial up number is used for all of the vending machines in the system of the present invention, the vending machine 106 may be identified to the server 120 after the connection to the server 120 has been established. Once the connection to the server 120, the server 120 may query the consumer 102 for additional information in order to identify the vending machine 106. Such additional information may include dialing of additional digits on the cellular telephone 114 that match a code number or other identifying index on the vending machine or may employ voice recognition software so that the server 120 can recognize and process a voice response from the consumer 102 that will serve to identify the vending machine 106.

Similarly, the request for credit at step 208 is communicated to the server 120 after the dial up or network connection has been established. Once the connection to the server 120 has been made, the server 120 may query the consumer 102 for

additional information in order to determine the amount of credit need at the vending machine 106 to purchase the product 104. Such additional information may be communicated to the server 120 by dialing additional digits on the cellular telephone 114 that represent the amount of requested credit or by employing voice recognition software so that the server 120 can recognize and process a voice response from the consumer 102 that identifies the amount of credit requested for the vending machine 106.

Alternatively, a request for a particular product 104 in the vending machine 106 at step 208 may be accomplished by several methods. First, each product in the vending machine 106 may have a unique dial up telephone number. Therefore, by dialing the designated telephone number for the requested product and by establishing the connection to the server 120, the server 120 is able to identify the requested product based on capturing the number dialed to make the telephone connection.

Second, a single dial up number may be used for requesting all of the products for the vending machine 106. In that case, once the connection to the server 120 has been made at step 206, the server 120, at step 208, may query the consumer 102 for additional information in order to identify the particular product 104 that is requested. Such additional information may be communicated to the server 120 by dialing additional digits on the cellular telephone 114 or by employing voice recognition software so that the server 120 can recognize and process a voice request from the consumer 102.

Once the server 120 has received the information from the consumer 102 from which the server 120 can identify the request for credit or the requested product 104, the method moves to steps 210 and 212 in which the transaction record 124 is created (step 210) and the vend code 126 is generated (step 212). Steps 210 and 212 may occur sequentially as shown in Fig.2, in the reverse order from that shown in Fig. 2, or simultaneously.

With respect to the creation of a transaction record 124 at step 210, the server 120, having identified the requested amount of credit or the requested product 104, creates the billing record 130 evidencing the transaction. The billing record 130 identifies the consumer 102 based on the consumer's association with the cellular telephone 114 that was used to make the call to the server 120. Such identification can be made using standard caller identification capabilities of the telephone network 122. In the circumstance where credit for the vending machine 106 is requested, the billing record 130 simply shows the amount of credit issued for the vending machine 106.

Where the transaction is for a particular product 104, the billing record 130 includes the cost of the product 104. In either circumstance, the billing record may include other information such as the time and date of the purchase and the location of the vending machine 106.

From step 210, the method proceeds to step 222 where the billing record 130 is transmitted to the billing agency 134. As previously explained, the billing agency 134 may be the telephone company which provides the service for the cellular telephone 114, a credit card company which has been identified by the consumer 102 as the appropriate billing agency 134 for charges incurred as a result of purchasing the product 104 from the vending machine 106, a bank that has issued a debit card which likewise has been identified by the consumer 102 as being the appropriate billing agency 134 for purchases from vending machine 106, or the product provider 108 which has established a charge account for the consumer 102 for purchase of products such as product 104. Whatever billing agency is used the billing agency bills and collects funds from the consumer 102 in accordance with the billing record 130 in the normal course of the billing agency's business. If the billing agency 134 is not the product provider 108, the collected funds (less the billing agency's charges) are remitted to the product provider 108 in payment for the product 104.

In addition to creating the billing record 130 at step 210, the server 120 may also create an inventory record 128 that indicates that the vending machine 106 has had its inventory of the product 104 reduced by 1 unit. From step 210, the method also proceeds to step 220. At step 220, the inventory record 128 is transmitted to product provider 108 so that the product provider 108 can restock the vending machine via conventional channel 132 (delivery truck, etc.) as necessary.

From step 210 the method also proceeds to step 212. At step 212, the server 120 generates a vend code 126 which is use to either establish credit at the vending machine 106 or to authorize the vending machine 106 to dispense the product 104.

From step 212, the method proceeds to step 213. At step 213, the vend code 126 is communicated to the consumer 102 via the telephone network 122 and the cellular telephone 114. Once the consumer 102 has received the vend code 126 at step 21, the method proceeds to step 214.

At step 214, the vend code 126 is transmitted by the consumer 102 to the vending machine 106. As previously explained, the vend code 126 may be transmitted to the vending machine 106 by means of the local RF transmitter 116 of the cellular phone 114, the RF link 112, and the local RF receiver 110 of the vending machine 106.

Alternately at step 214, the vend code 126 may be an audible signal or tone which is transmitted from the earpiece of the cellular telephone 114 to the local microphone 110 at the vending machine 106. The vend code may be transmitted via a local IR transmitter 116, a local IR link 112, and a local IR receiver 110. Alternatively at step 214, the vend code 126 may be an alphanumeric code which is communicated to the orally or graphically to the consumer 102. The consumer in turn manually enters the alphanumeric vend code 126 into the vending machine 106 via a keypad or other manual entry device.

From step 214, the method proceeds to step 216. At step 216, the vending machine 106 recognizes the vend code as authorization to establish credit at the vending machine 106 or to dispense the product 104 that the vending machine 106 has in its inventory. If the vend code is a credit authorization, the vending machine 106 establishes that amount of credit and communicates to the user that the credit has been established. Once the vending machine has established the credit, the consumer simply selects the product 104 just as he or she would if currency had been used at the vending machine to purchase the product 104. If the vend code is a product authorization, the vending machine 106 dispenses the product 104 to the consumer 102. The method ends at step 218.

The system 100 and method 200 of the present invention allow the consumer 102 to purchase the product 104 from the vending machine 106 by dialing a telephone number on the consumer's cellular telephone, PDA, or other personal communication device 114, by receiving a vend code 126 from the server 120, and by transmitting the vend code 126 to the vending machine 106. Thus, the system 100 and method 200 of the present invention eliminates the need for currency or for a dedicated communication link between the vending machine 106 and the product provider 108 or the billing agency 134.

CLAIMS

What is claimed is:

1. A method of purchasing a product by a consumer from an automatic vending machine operated by a provider of the product comprising the steps of:

a) initiating a telephone call by the consumer, on a cellular telephone identified with the consumer, through a telephone network to a server associated with a billing agency;

b) upon connection of the consumer's telephone to the server via the telephone network, requesting purchase of the product from the vending machine;

c) creating a transaction record including a billing record that identifies the consumer;

d) generating a vend code for the purchase of the product in the vending machine;

e) communicating the vend code from the server to the consumer via the cellular telephone;

f) transmitting the vend code to the vending machine; and

g) in response to receiving the vend code, dispensing the product from the vending machine to the consumer.

2. The method of Claim 1, wherein the step of initiating the telephone call includes the dialing of a telephone number that corresponds to the product and wherein the step of requesting purchase of the product includes capturing the telephone number by the server and identifying the product based on the telephone number dialed by the consumer.

3. The method of Claim 1, wherein the step of initiating the telephone call includes the dialing of a telephone number and wherein the step of requesting purchase of the product includes dialing additional numbers that identify the product.

4. The method of Claim 1, wherein the step of initiating the telephone call includes the dialing of a telephone number and wherein the step of requesting purchase of the product includes identifying the product based on a verbal response by the consumer.

5. The method of Claim 1, wherein the step of initiating the telephone call includes the dialing of a telephone number and wherein the step of requesting purchase of the product includes dialing additional numbers that indicate the amount of credit to be established at the vending machine.

6. The method of Claim 1, wherein the step of initiating the telephone call includes the dialing of a telephone number and wherein the step of requesting purchase of the product includes indicating the amount of credit to be established at the vending machine based on a verbal response by the consumer.

7. The method of Claim 1, wherein the vend code includes information to authorize credit at the vending machine for the purchase of the product.

8. The method of Claim 1, wherein the vend code includes information to authorize dispensing of the product at the vending machine.

9. The method of Claim 1, wherein the vend code is transmitted from the cellular telephone to the vending machine via a radio frequency link.

10. The method of Claim 1, wherein the vend code is transmitted from the cellular telephone to the vending machine as an audible signal.

11. The method of Claim 1, wherein the vend code is transmitted from the cellular telephone to the vending machine via an infrared link.

12. The method of Claim 1, wherein the vend code is an alphanumeric code that the consumer receives from the server and enters into the vending machine.

13. The method of Claim 1, wherein the method further includes the steps of identifying the vending machine to the server and updating an inventory record for the vending machine based on the request for the product.

14. The method of Claim 1, wherein the method further includes the step of collecting transaction data from the server.

15. A system for purchasing a product by a consumer from a provider of the product, the system comprising:

a) a vending machine that has the product available for sale, wherein the vending machine comprises:

(1) a display that displays a telephone number to be called to request purchase of the product; and

(2) a local receiver in the vending machine for receiving a vend code; and

(3) means for dispensing the product in response to the receipt of the vend code;

b) a cellular telephone having an associated account identified with the consumer;

c) a server operated by a billing agency that is authorized to bill the associated account; and

d) a telephone network for connecting the consumer's cellular telephone to the server when the displayed telephone number is dialed by the consumer,

wherein the server, upon connection to the consumer's cellular telephone, receives a request for the purchase of the product from the vending machine, creates a transaction record for the request, and communicates the vend code to the consumer via the consumer's cellular telephone and wherein the consumer transmits the vend code to the local receiver of the vending machine to authorize the vending machine to dispense the product to the consumer.

16. The system of Claim 15, the transaction record includes a billing record that is posted to the associated account.

17. The system of Claim 15, wherein the transaction record includes an inventory record that is sent to the provider of the product for the vending machine.

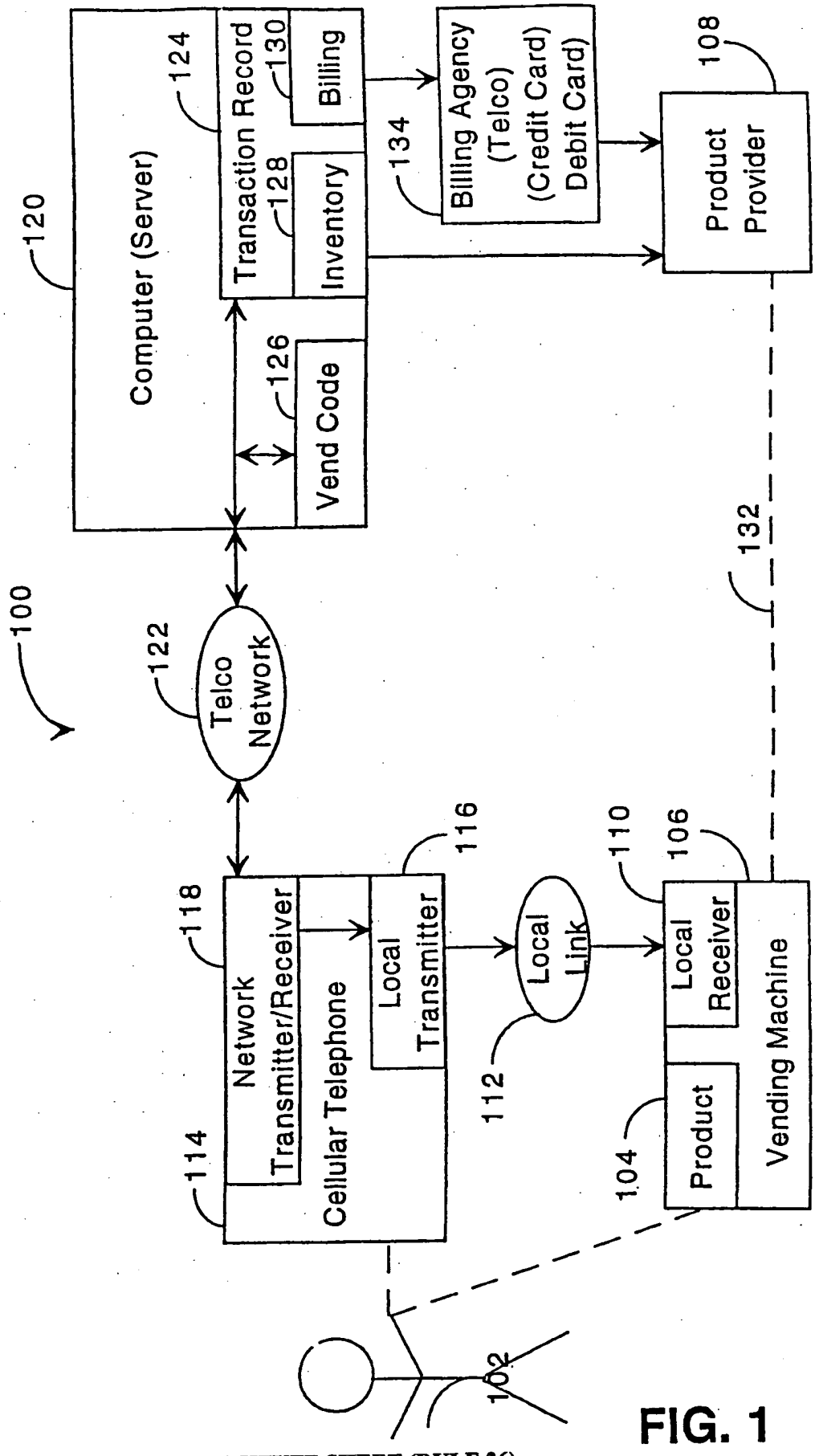
Computer (Server)
120
Transaction Record
124
Billing
130
Inventory
128
Vend Code
126
Billing Agency (Telco) (Credit Card) Debit Card)
134
Product Provider
108
100
Telco Network
122
132
Network Transmitter/Receiver
118
Cellular Telephone
114
Local Transmitter
116
Local Link
112
Local Receiver
110
Product
104
Vending Machine
106
102

FIG. 1

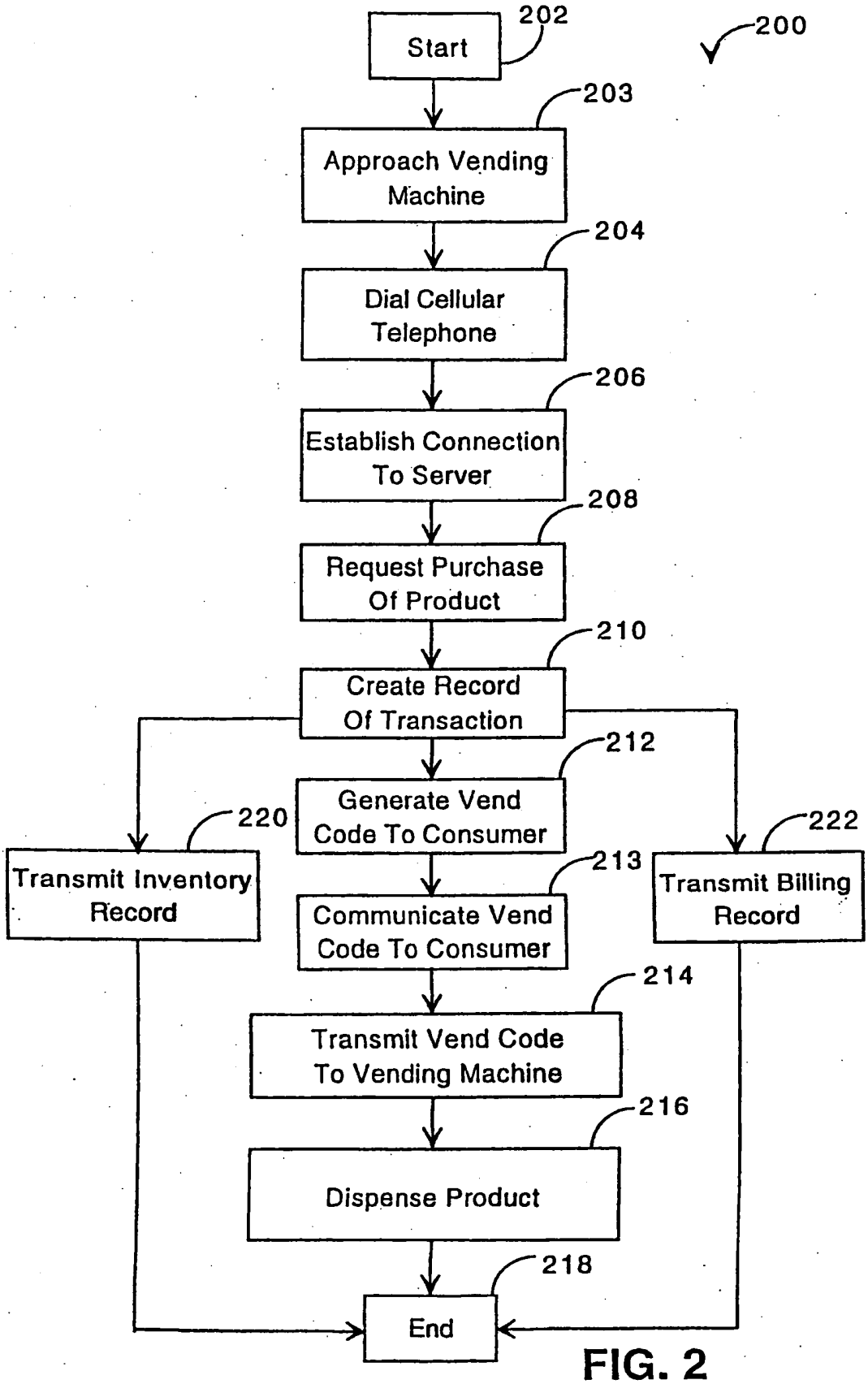
200
Start
202
Approach Vending Machine
203
Dial Cellular Telephone
204
Establish Connection To Server
206
Request Purchase Of Product
208
Create Record Of Transaction
210
Generate Vend Code To Consumer
212
Transmit Inventory Record
220
Communicate Vend Code To Consumer
213
Transmit Billing Record
222
Transmit Vend Code To Vending Machine
214
Dispense Product
216
End
218

FIG. 2

INTERNATIONAL SEARCH REPORT

Interna[redacted]l Application No
PCT[redacted]00/33802

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G07F7/10 G06F17/60 //G07F19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G07F G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 22346 A (SONERA OY ;VIHINEN SEPPO (FI); STEWEN TEEMU (FI)) 6 May 1999 (1999-05-06) page 3, line 3 -page 7, line 27 page 8, line 33 -page 10, line 31 ---	1-4,13, 15-17
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[X] Further documents are listed in the continuation of box C.

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20 April 2001	02/05/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Bocage, S

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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